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# EFFECTIVE PLANNING OF JOINT AIR OPERATIONS

A Monograph
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## ABSTRACT

EFFECTIVE PLANNING OF JOINT AIR OPERATIONS by MAJ Leonard S. Moskal, USAF, 57 pages.

Immediately following Operations Desert Shield and Desert Storm, all the services were quick to point out how well they had conducted joint operations throughout the crises. Upon closer examination, it has become evident that Army and Air Force joint operations did not produce seamless effects throughout the area of operations. One of the major areas of concern is planning and coordinating Air Force operations in concert with Army deep operations. This paper addresses how the Army and Air Force plan deep operations and how these planning procedures may be improved to increase the joint effects of their weapon systems. Specifically, what problems still exist in planning joint air operations and how can we fix them?

This monograph begins by looking at the aspects of joint operations that are still not conducted successfully and the areas of disagreement that exist between the Air Force and Army. Using this frame of reference the paper establishes the definitions of deep operations that the Air Force and Army use. .

Next, based on the definitions of deep operations the monograph compares how each service plans their deep operations. A historical analysis is included that shows how deep operations have been planed in the past. It also helps to establish how history has influenced the ways the Air Force and the Army define success

Finally, the monograph considers how the historical influence on each service has effected their inability to work together. The monograph concludes with recommendations on various considerations in Army and Air Force deep operations that may enhance the effective planning and execution of deep operations.

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## I. INTRODUCTION

Immediately following Operations Desert Shield and Desert Storm, all the services were quick to point out how well they had conducted joint operations throughout the crisis. Upon closer examination, it has become evident that Army and Air Force joint operations did not produce seamless effects throughout the area of operations. One of the major areas of concern is planning and coordinating Air Force operations in concert with Army deep operations.[1] This paper will address how the Army and Air Force plan deep operations and how these planning procedures may be improved to increase the joint effects of their weapon systems. Specifically, what problems still exist in planning joint air operations and how can we fix them?

A review of United States military operations in the Gulf reveals that problems of coordinating deep operations between the Army and the Air Force are still evident. Even though the Goldwater-Nichols Defense Reorganization Act had gone a long way to improve inter-service cooperation, the fact remains that the Army and the Air Force do not agree on how to divide the battlefield and how to conduct joint operations. Issues such as FSCL placement, air interdiction (AI) versus battlefield air interdiction (BAI), JFACC control of Army deep strike assets and corps commander control of Air Force deep strike assets continue to cause inter-service conflict. The Army and Air Force can not even agree if there is such a thing as a separate air campaign. All of these factors combine to reduce the effectiveness of joint Army and Air Force operations. A major issue of how to apportion Air Force sorties also remains unresolved. Should the JFACC focus on achieving air superiority or does the JFLCC

need to focus on the close fight? Where does strategic attack fit in? With limited air assets and theater wide requirements, how does the joint or combined force commander prioritize the use of air assets?

Two more factors have added to the confusion of how to conduct joint operations. First, both the Air Force and the Army have procured weapon systems that intrude on the other's perceived traditional missions. The Air Force has improved its tank killing abilities and the Army has purchased better deep strike weapon systems such as ATACMS. The second factor is the reduction in the military budget that has produced calls for a reduction in overlapping capabilities and a potential realignment of missions.[2] The combination of these two factors increases the disagreement as to who should be conducting deep operations and where they start. This argument is most evident when the Army and the Air Force discuss the mission of BAI. This mission is normally conducted at the maximum range of Army assets. The Army considers this an important area of operations and the Air Force no longer recognizes it as a separate mission.[3]

The fact remains that each service brings capabilities to the fight that the other service does not have. In a time of reduced fiscal expenditure, it is much more important for the services to be attempting to optimize their joint effectiveness as opposed to fighting over who should do what. The Army and the Air Force must start planning operations that take advantage of each other's capabilities and optimize their effects throughout the joint area of operations. It is the author's intention to address these issues in the monograph.

Research began by looking at exactly where the Air Force and Army disagree. Next, the author examined how the Air Force and Army doctrinally plan deep operations. This area included an examination of how each service defines deep operations. Once this was established, the author examined the differences in the effects the Air Force and Army want from their deep operations and see if these differences are having any adverse effects on joint operations. The main purpose of this research is to determine if there are areas of overlap that cause conflicts in planning and execution.

With an understanding of current planning procedures, the author conducted a historical analysis of selected joint ground and air operations to determine what has been and what has not been successful in the past. Finally, the author will analyze all of the information given and establish what factors exist that are preventing optimal planning of air operations in a joint environment. The author will then establish whether or not these factors are obstacles that can be overcome and offer some solutions to remove them or reduce them.

All source documents are unclassified. The historical analysis will include air operations that did not involve the United States and will also include both joint and combined operations.

The monograph has seven major sections. The first section is the introduction. This section posed the research question and gave some background on the importance of the question. The focus was on the debate between the Army and the Air Force on how to

conduct joint operations. The paper outline is included in this section with the research methodology.

Section II will introduce the reader to the aspects of joint operations that are still not conducted successfully and what areas of disagreement exist between the two services. This section will establish that certain aspects of joint operations have been preventing the Air Force and Army from optimizing their inter-service cooperation and therefore their effects.

Section III establishes the background for planning procedures. Deep operations and planning considerations as defined by JFACC, army and joint publications will be the focus. The author's intent in this section is to compile all the information on deep operations contained in the various service and joint publications. The author will then introduce each services definition of deep operation that will be used throughout the rest of the paper.

Section IV will analyze the information in section III and will determine the major differences and similarities between Air Force and Army planning procedures. The differences are further analyzed to determine if they are reducing the services' inter-operability. This section also analyzes what outcome the services expect from their deep operations to determine if they are complementary, mutually exclusive or a little of both.

Section V contains the historical background of joint air and ground operations. The focus here is on what was successful and what was not in past operations. This section also attempts to show what views the Air Force has had at the start of each conflict and

how these views were or were not changed by the outcome. It also establishes whether or not we have learned any lessons from previous conflicts and if we have put these lessons into practice. The historical background includes but is not limited to wars fought by the United States. The paper includes information on the Luftwaffe, the Iran-Iraq War and the Arab-Israeli Wars in the appendix. This section uses WW II as the starting point for joint operations and continues to discuss operations that have occurred since.

Section VI will relate the analysis made in the monograph to answering the subordinate research questions. It begins with a review of all the major points that were made. The section reviews the issues that are points of disagreement between the Army and the Air Force and attempts to give some historical background to them. It concludes with an analysis of the remaining information put forward in the historical background section.

Section VII is the final section. It begins by relating the analysis to the research question; Do joint planning procedures optimize the use of airpower during joint deep operations? The point that current joint operations do not optimize joint capabilities is reconsidered. Conclusions are based on all the major points made. These conclusions are then related to the research question. Recommendations of ways to improve planning of joint operations will be addressed. The intent of this section is to take all of the information put forward in the paper and determine if changes in planning procedures for Air Force and Army joint operations will enhance inter-service operability.

## II Joint Operations Barriers

As discussed earlier, Operation Desert Storm was an extremely successful operation. There were, however, problems that existed from the outset that reduced the effectiveness of joint Army and Air Force operations.

> With the start of air operations, tension grew between the Air Force, which was concentrating its efforts on strategic and independent operational strikes, and the leadership of Third Army, which assumed that the ground attack would be the theater commander's principal means to achieve success and must, therefore, be given priority for direct employment of air assets. At its root, the argument was an old one, reflecting differing views of the role of air power in theater operations.[4]

To set the background for this paper, this section will address in detail the various aspects of joint operations that are not conducted as successfully as possible. It will also review the areas of disagreement that exist between the Army and the Air Force. The method of evaluation will be to give the point of view of each service.

The first issue that will be addressed is the use of the fire support coordination line (FSCL) as a fire control measure. The Army sees the FSCL as a means to prevent fratricide. Air Force assets can only conduct attacks short of the FSCL after coordinating with ground forces and by being controlled by ground or airborne controllers. Supporting fires beyond the FSCL are permissive and the Army can conduct these fires without coordination.[5]

The Air Force agrees with the requirement to coordinate air attacks short of the FSCL. It believes, however, that Army fires beyond the FSCL must be coordinated in the same manner. The Air Force is just as worried about fratricide beyond the FSCL as the Army is short of it.[6]

The issue that emerges is as follows: Does coordinating fires short of and beyond the FSCL reduce the effectiveness of joint operations? If the Air Force does not respond to Army requests to fire beyond the FSCL in a timely manner, time sensitive targets will not be destroyed. In response to this the Army pushes the FSCL farther away from the FLOT. This creates a large area in which Air Force assets must coordinate with the Army to conduct strikes. When this occurs the Air Force, if delayed coordinating with the Army, is unable to attack time sensitive targets.

The possible outcome of this is the creation of an area on the battlefield that is serviced by limited assets, either Army or Air Force. By moving the FSCL far from the FLOT an area is created that is serviced by mostly Army assets. This area could become a sanctuary for target sets that cannot be affected or destroyed by the assets available to the Army commander. The same effect occurs if the FSCL would be pushed back close to the FLOT. Due to the command and control restrictions of Army assets firing beyond the FSCL, a sanctuary would be created for numerous targets that could be destroyed by Army assets and are within direct fire range of Army assets. However, since they are beyond the FSCL, the Army assets must coordinate their fires.

Joint doctrine puts the responsibility for ensuring that there are seamless operations between deep, close and rear operations on the joint forces commander (JFC). This would appear to be where the responsibility belongs. Only the JFC has all of the assets available to conduct deep operations and, using his intent, develops the concept of operations as well as the control measures that are required. "To be effective, JFCs should not allow an enemy sanctuary or respite."[7]

The second issue that will be discussed is BAI versus AI. The Air Force views the interdiction mission as one mission conducted throughout the entire theater of operations. AI is defined as "air operations conducted to destroy, neutralize or delay the enemy's military potential before it can be brought to bear effectively against friendly forces at such distance from friendly forces that detailed integration of each air mission with the fire and movement of friendly forces is not required."[8] Interdiction is defined as "an action to divert, disrupt, delay or destroy the enemy's surface military potential before it can be used effectively against friendly forces."[9] The Air Force does not have the phrase BAI in any of its doctrinal manuals.

The Army, however, does see BAI as a separate and important mission. This is based on its experience in NATO.[10] They define BAI as "air action against hostile surface targets which are in a position to directly affect friendly forces and which requires joint planning and coordination. While BAI requires coordination in joint planning, continuous coordination may not be required during the execution stage."[11] FM 6-20-30 expands the definition of BAI.

> BAI is an Air Force task within the framework of the AI mission. The AI attacks conducted against hostile land forces that are not in close proximity to friendly forces are referred to as battlefield air interdiction if the hostile forces could have a near term effect on the operation or scheme of maneuver of friendly forces. Prior coordination ID required between the Army and the Air Force for attack of BAI targets. BAI has a direct or near-term effect on surface operations.[12]

This definition is very close to the Air Force definition of close air support (CAS). CAS is "air action against hostile targets which are in close proximity to friendly forces

and which require detailed integration of each air mission with the fire and movement of those forces."[13]

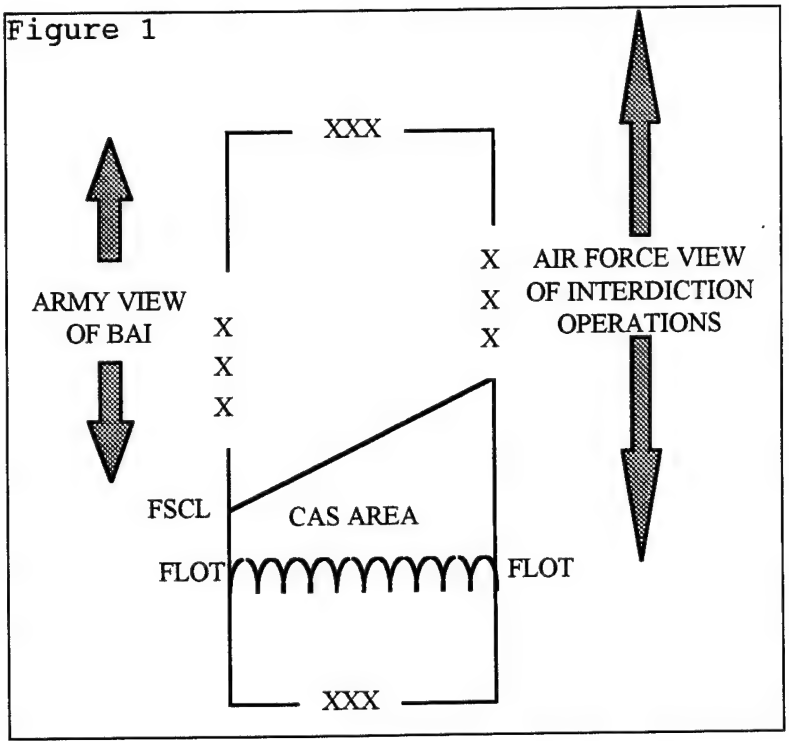
Other than the requirement for detailed integration these definitions are very similar. In fact, the Air Force will conduct CAS without detailed integration of each sortie so CAS, in the eyes of the Air Force, can be the same as BAI. The fact that the Air Force does not recognize BAI as a mission gives the impression to the Army that the Air Force is not sympathetic to their needs.

The Army views AI as operations that are conducted against strategic targets nominated by the CINC and BAI targets are corps commander nominated and are closer to tactical units. "BAI provides one of the most powerful means for the corps commander to shape the battlefield."[14] In the view of Army commanders, not seperating BAI from the entire category of interdiction reduces the corps commanders ability to influence the shape of the tactical battle.[15]

The Air Force does not limit AI operations to CINC nominated targets. When "interdiction supports maneuver, maneuver component commanders may designate targets or objectives for the supporting interdiction effort inside maneuver force boundaries."[16] The target nomination process for the JFC and the a corps commander gives both commanders the ability to influence the battlefield. This includes the timing and effects required to shape the battlefield the way the corps commanders want. Calling AI missions that have been allocated to the corps commanders BAI missions do not give the corps commanders any more control. In reality AI missions conducted in

support of the corps commander's scheme of maneuver are the same as BAI. It is just that each service looks at the same missions in a different manner. See figure 1.

Figure 1




The next issue that the Air Force and Army do not see eye to eye on is the apportionment of air sorties.

> Apportionment is the determination and assignment of the total expected effort by percentage and/or priority that should be devoted to the various air operations and/or geographic operations for a given period of time. The total expected effort made available to the JFACC is determined by the JFC in consultation with component commanders based on the assigned objectives and the concept of operations. JFCs normally apportion by priority or percentage of effort into geographic areas, against mission-type orders, and/or by categories significant for the campaign. These categories can include strategic attack, interdiction, counterair, maritime support, and close air support. After consulting with other component commanders, the JFACC makes the apportionment recommendation to the JFC.[17]

The Air Force believes their primary mission is to achieve air superiority. Without it, nothing else can be accomplished successfully. "Air superiority is a necessity. Since the German attack on Poland in 1939, no country has won a war in the face of enemy air superiority, no major offensive has succeeded against an opponent who controlled the air, and no defense has sustained itself against an enemy who had air superiority."[18]

Achieving air superiority is not limited to the destruction of an enemy's air force. "To be superior in the air, to have air superiority, means having sufficient control of the air to make air attacks on the enemy without serious opposition and, on the other hand, to be free from the danger of serious enemy air incursions."[19] This means that the limited air assets are not only tasked to destroy an enemy's air force. The air defense system must be disrupted or destroyed also. These additional requirements reduce the air frames available to conduct other missions such as interdiction and CAS.

For many operations the Army feels that interdiction or CAS may be much more important. Ground commanders are immediately threatened by the forces in front of them. For this reason they tend to disagree with the Air Force on the importance of attacking these forces instead of conducting deep strikes to establish air superiority. The Air Force views interdiction and CAS as traditionally secondary and tertiary missions.[20] This view also gives the impression that the Air Force is not responsive to the Army's needs. It is an often held belief that the Air Force ignores the needs of the Army when conducting operations to achieve air superiority.

The major reason for these differing views will become obvious during the discussion of the final area of disagreement that exists between the Army and the Air

Force. The argument over whether or not there can be a separate air campaign. The differing opinions stem from a basic disagreement in how the Army and the Air Force view the role of airpower. "The average senior commander in the U.S. Army is a prisoner of his own experience, which is almost entirely tactical-that is, focused on ground battle at division level and below."[21] For this reason Army commanders see the use of airpower as dependent on the outcome of the ground battle not an independent service that conducts an independent campaign. It is a "means to weaken the enemy and shape the battlefield."[22] Only ground forces can occupy terrain and therefore only ground forces can achieve the ultimate strategic objectives or victory. For these reasons the ground effort is always the supported effort and the air effort is always the supporting effort.

This position is not held by many airpower advocates. "Since the dawn of military aviation, airpower advocates have sought victory through airpower."[23] It is this view that victory or decisive results can be obtained with airpower that is the fundamental difference in the views of the role of airpower. The Air Force views air operations as independent of ground operations. They may be conducted to support maneuver operations, but they are not dependent on ground operations nor do air planners always expect to follow the air campaign with ground operations. The Air Force opinion is that all three services, Air Force, Army and the Navy, will have roles in most conflicts. This, however, will not always be true. There will be instances that all three do not have an equal role. It is up to the theater commander to identify which components or single component that will play the primary role in achieving his theater

objectives. The Air force view is that the force that plays the primary role to achieve victory will not always be ground forces.[24] By assuming that ground operations will always be required planners limit the options available to the theater commander.

## III Deep Operations

For the Air Force, deep operations are not easily defined using doctrinal manuals. Air Force Manual (AFM) 1-1 vol I discusses deep operations in relation to interdiction.

> Interdiction may have tactical, operational, or strategic-level effects. The depth at which interdiction is conducted often determines the speed with which its effects are seen. Depending on a variety of factors, such as the nature of enemy forces and communications infrastructure, interdiction deep in the enemy's rear will have a broad operational or strategic-level effect but a delayed effect on surface combat. Such operational and strategic-level effects normally will be of greatest concern from the theater perspective. In contrast, targets closer to the battle are likely to be of more immediate concern to surface maneuver units. Interdiction close to the battle area will produce more quickly discernible results, but only on forces in the vicinity of the attacks. Regardless of where interdiction is performed, air and surface commanders together should consider how surface forces can be employed to enhance the ability of air interdiction to support the campaign's objectives.[25]

AFM 1-1 vol II states that the Air Force conducts interdiction over a "broad, deep, area"[26] or "concentrated in a small area close to friendly surface forces."[27] The JFACC primer gives a clearer starting point for Air Force deep operations. Under the heading Interdiction and Deep Operations, the JFACC primer describes the airman's perspective of deep operations.

> The component commanders with forces at risk beyond the FSCL are the JFACC and the Special Operations Component Commander. The JFACC's C3I architecture is uniquely capable of planning and controlling operations in territory occupied by hostile forces. The JFACC is responsible for a number of missions, none of which is geographically bounded. Responsibility for synchronizing theater interdiction assets should be vested in the commander who

> has the preponderance of attack assets and the C3I capability to conduct these operations; for interdiction it is normally the JFACC.[28]

Combining these statements, the Air Force perspective on deep operations is that they begin at the FSCL and extend into the strategic infrastructure of the enemy.

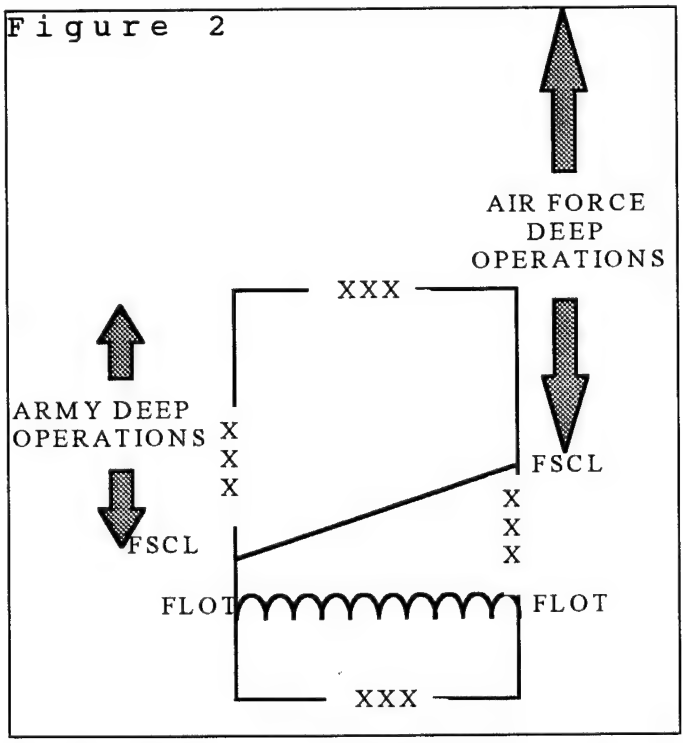
The Army's doctrinal manuals also fail to give a clear picture of deep operations. Field Manual (FM) 101-5-1 defines deep battle as "All actions which support the friendly scheme of maneuver and which deny to the enemy commander the ability to employ his forces not yet engaged at the time, place, or in the strength of his choice."[29] This definition is in agreement with the Air Force definition, but is still very vague. The FM 100-5 definition states that army deep operations can be conducted by "Airborne and air assault forces, attack aviation units, and high speed armor forces" as well as artillery.[30]

> Deep operations are those directed against enemy forces and functions beyond the close battle. They are executed at all levels with fires, maneuver, and leadership. Deep operations affect the enemy through either attack or threat of attack. They expand the battlefield in space and time to the full extent of friendly capabilities. Effective deep operations facilitate overall mission success and enhance protection of the force. The deep battle is designed to nullify the enemy's firepower, disrupt his C2, destroy his supplies, and break his morale. A well-orchestrated deep battle may help cause the enemy to be defeated outright or may prevent him from achieving his intended objectives. In conducting simultaneous attacks in depth, Army forces employ long-range, intelligence-acquisition and targeting assets, including electronic warfare and joint assets, to track enemy forces, to complicate their operations, and to determine the effects of our strikes in depth.[31]

From the proceeding definition, deep army operations are conducted beyond the close battle. From 100-5, "Forces in immediate contact with the enemy, in the offense or defense, are fighting close operations. Close operations are usually the corps and

division current battles. At the tactical level, they include the engagements fought by brigades and battalions."[32] Therefore, the Army area for deep operations extends from the close fight to the maximum range of air assault forces, attack aviation units, high speed armor forces or artillery.

Comparing the information obtained from Army and Air Force publications the following definition of deep operations that is relative to both services will be used in this paper. The deep battle begins where the close fight ends. For the Army it extends to the boundary established by higher headquarters for the ground component commander and for the Air Force it extends into the strategic infrastructure of the enemy. See figure 2.



The area where both services are concerned with deep operations exists between the FSCL and the maximum range of army assets or the extent of the boundary established for the ground component commander. As was shown earlier, this is the area where, in the Army view, BAI should be conducted. In the Air Force view, this area is all part of the interdiction area of operations.

The Air Force concept of planning deep operations is based on the principles of war and the tenets of aerospace power.[33] The tenets of aerospace power are: centralized control/decentralized execution, flexibility/versatility, priority, synergy, balance, concentration and persistence.[34] Their main or "master tenet" that has the greatest influence on campaign planning is centralized control. [35]

> Without centralized control commanders cannot exploit the speed and flexibility of aerospace platforms to concentrate forces-whether in attack or defense-from diverse locations on decisive points, establish and enforce theater wide priorities, execute synergistic campaigns, establish appropriate balances, or assure persistent attacks.[36]

Using the concept of centralized control, the Air Force or the JFACC plans deep air operations. This allows the theater commander, through the JFACC, to employ all available assets throughout the theater of operation. Since air assets are limited in number, it is essential that the planning for the use of these assets be centralized and remain focused on the theater commanders objectives.[37]

> In general, control of the air is a prerequisite to pursuing other objectives effectively and affordably. Once friendly forces can operate without unacceptable hindrance and risk, air operations should focus on neutralizing the enemy center(s) through strategic attack, interdiction, or close are support.[38]

Close air support is addressed as a means to attack an enemy's center of gravity. However, Air Force planning procedures are primarily focused on attacking strategic targets.[39] The Army, as addressed earlier, is more tactically and operationally focused than the Air Force when it comes to planning deep operations. According to Army doctrine:

> The enemy is best defeated by fighting him close and deep simultaneously. In doing so, Army forces use deep operations to set the conditions for decisive future operations. Attack of enemy formations at depth delays, diverts, or reduces enemy combat capabilities and hastens enemy defeat. These operations enable friendly forces to choose the time, place, and method to fight the close battle. The principle targets of deep operations are the freedom of action of the opposing commander, the coherence and tempo of his actions, and the physical size of his force or selected parts of it. Successful deep operations attack the enemy's functions, such as command, logistics, and air defense, while also destroying his combat forces.[40]

This statement does not even address conducting deep operations in support of the strategic objectives. It is mainly focused on what the deep operations must achieve. That is to establish the conditions that will achieve tactical success through the close battle.

In summary, the Air Force considers the deep fight its primary mission. Close operations, CAS, will be conducted if required to help the ground forces. However, the deep fight is conducted to help the theater commander achieve his strategic objectives. The Army, on the other hand, considers the close fight its primary mission. Therefore it makes sense that the Army conducts deep operations to set the conditions for success in the close fight. The strategic objectives of the theater commander can only be achieved once ground forces have been defeated in ground combat. These two

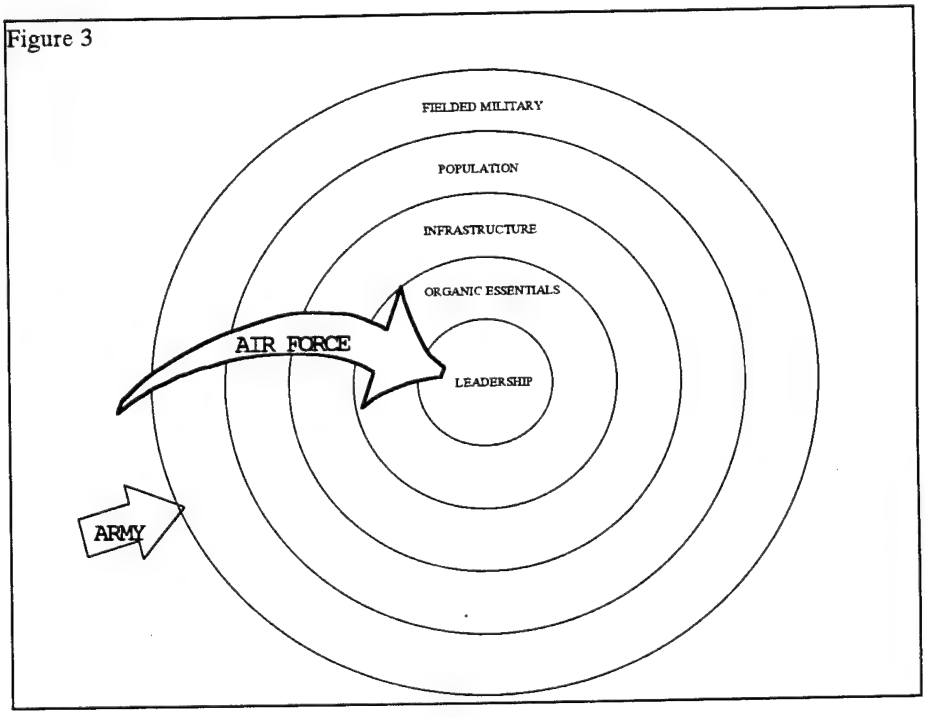
separate views are the fundamental differences between the Army and The Air Force. One service views the deep fight as the way to victory and the other views the deep fight as setting the conditions for victory through the close fight.

## IV PLANNING PROCEDURES

These different views on deep operations have a significant effect on how each service plans deep operations. The Air Force plans their deep operations to have strategic effects. Their view is these strategic effects are necessary in order for the theater commander to achieve his strategic objectives. The Army plans their deep operations to influence the close fight. Successful completion of the close fight, in their view, is necessary for the theater commander to achieve his strategic objectives.

In keeping with the view that deep operations can achieve the theater commanders strategic objectives, the Air Force views the enemy as a complex system.[41] This view of the enemy as a system puts the ground combat units as just one subset of the entire target set available to the Air Force. See figure 3.

Figure 3



Each ring represents one subset of target choices within the entire set of targets that the enemy system has. The innermost ring of the system is the most critical ring because it is the command and control of the system. Incapacitating the proper targets within the inner ring would equate to removing the brain from the system. This would facilitate the strategic paralysis necessary to help obtain the theater commander's objectives. Striking the proper targets in the other rings will have the indirect effects of reducing the leadership's ability to continue to control the war as well as reducing the essential material necessary to wage war. It is important to note that, in the Air Force's view, airpower can bypass the outer ring that is the fielded military and the next ring that is the civilian population.[42] . The Air Force is able to strike at any target within any ring while the Army is normally limited to the outermost ring.

Using the model of the rings allows Air Force planners to prioritize the targets that need to be attacked.

> The JFC may prioritize theater military objectives, or the JFACC may do the same with air objectives. Such a conscious decision to prioritize objectives may drive the phasing of the air campaign plan by dictating a specific mission flow based on strategic and operational considerations. This will translate into assignment of relative values for specific target sets and individual targets. Attacks on target sets may take place in series or in parallel. The priorities defined by the JFACC may force the selection of either one of these schemes or some combination of the two. Attack in series generally refers to attacking targets in the highest priority target set sequentially, beginning with the highest priority target and continuing to the lowest priority, before initiating attack on the next target set. Attack in series may also refer to a sequential attack based primarily on geographical considerations. Attack in parallel refers to attacking targets across several or more geographically dispersed target sets at the same time.[43]

Ideally attacking just one target would allow the Air Force to remove the head of the enemy or the system and achieve the strategic paralysis necessary to achieve the theater commander's objectives. However, the complexities and redundancy of modern day communication systems as well as the military's ability to reorganize when critical leadership nodes are destroyed or removed make it impossible to strike against one leader or one leadership node. The Air Force is forced to conduct operations that are not limited to targets within the innermost ring.[44] These operations could be conducted in series or in parallel as discussed earlier. Parallel operations may be the best option available and are preferred by Air Force planers. "While powerful synergies can be created when aerospace land and naval forces are employed in a single, integrated campaign, it is possible that aerospace forces can make the most effective contribution when they are employed in parallel or relatively independent aerospace campaigns."[45]

In contrast to how the Air Force plans deep operations, the Army's focus is to conduct deep operations to facilitate close operations. As stated earlier "these operations enable friendly forces to choose the time, place, and method to fight the close battle."[46] It is this emphasis on a need to fight the close battle that shapes the way the Army plans to conduct deep operations. It also influences how the Army views successful joint deep operations.

According to Army doctrine deep attacks should be accomplished to limit "the freedom of action of the opposing commander."[47] At the same time, the ground commander needs to retain his own freedom of maneuver. "While one combatant's purpose seeks retention of his own freedom of action, the other seeks to deny that

freedom from him, while concurrently retaining his own."[48] To accomplish this the ground commander is not worried about the entire theater of operations. He looks "at the battlefield like a giant bowling ally."[49] All the successful ground commander needs to do is sweep the obstacles from his path, starting with the one closest to him. It is only through these close tactical fights that the strategic objectives can be met. The Army believes "That only great tactical successes can lead to great strategic ones; or...tactical successes are of paramount importance in war."[50] Tactical operations consist of battles and engagements. Tactical operations are conducted on the battlefield.[51] In other words, the Army achieves strategic success through a series of close engagements or battles. Deep operations are conducted to limit the freedom of maneuver of the enemy to facilitate the successful completion of the close battle. This supports the Army's view that "actions by ground force units ... will be the decisive means to the strategic ends."[52]

This brings us back to the basic difference between Air Force and Army deep operations. The Air Force attempts to achieve strategic results through strategic attack. By treating the enemy as a system, they attempt to achieve strategic paralysis which in turn leads to accomplishing the theater commander strategic objectives. The Army conducts deep operations to reduce the enemy's freedom of maneuver. This allows them to achieve tactical success on the battle field. In the Army view, it is only through tactical success that strategic success can be achieved. These two different views not only influence how each service fights but also how they plan operations.

They also influence their target selection, their target priority and how they measure success.

The initial assessment of the information given in this section would seem to suggest that the Air Force and Army views of deep operations are not complementary and are in fact mutually exclusive. Using the rings diagram in figure 3 it would appear that the Air Force is focused on the center ring and the Army is focused on the outermost ring. Upon closer examination of the information given, one can determine that that is hardly the case.

The Air Force focus on achieving strategic results through strategic targeting does not rule out striking targets outside of the innermost ring. It has already been established that the Air Force believes that striking targets on the outer rings can have the indirect results of affecting the innermost ring. The same corollary should hold true for the outermost ring. Striking targets that make up the infrastructure and organic essentials would have a direct effect on the enemy's ability to wage war and an indirect effect on the fielded military.

Considering the Army's focus on the tactical level their targets would not have to be limited to the fielded forces. It has already been established that striking targets that include infrastructure and organic essentials would have an indirect effect on the fielded forces. This effect would enhance the Army's ability to "choose the time, place, and method to fight the close battle."[53] The Army should include targeting the leadership or innermost ring. This would have the effect of limiting or even preventing the

enemy's freedom of maneuver. The leadership ring "provides the vital link between strategic objectives and tactical employment of forces."[54]

Air Force and Army deep operations are not mutually exclusive. Their views on how to obtain the theater commander strategic objectives may not be in complete agreement, but this should not prevent them from conducting successful joint operation. Their deep operations are in fact complementary. Though while seeing different approaches, both services are attempting to achieve the same objectives.

## V HISTORICAL BACKGROUND

The previous sections have established how the Air Force and Army view deep operations. This included how they plan them and what effect they expect from them. This section contains a historical analysis of joint air and ground operations. The focus here is on what was successful and what was not in past operations. This section attempts to establish whether or not we have learned any lessons from previous conflicts and if we have put these lessons into practice. This section will also establish how the Air Force and Army have become focused on strategic versus tactical operations. The historical analysis includes, but is not limited to, wars fought by the United States. The paper includes information on the Luftwaffe, the Iran-Iraq War and the Arab-Israeli Wars that is in appendix A. The background presented begins with WW II as the starting point for joint operations and continues to discuss operations that have occurred since. This is presented to show how in each service a different "culture" has emerged in understanding the nature of modern military operations.

## The Army Air Corps in WW II

The Army Air Corps entered WW II with a view of themselves that was much different from that of the Luftwaffe. (See appendix) The Army and Navy both saw the Air Corps "as a useful auxiliary to the surface forces in the battle to defeat the enemy."[55] The Army Air Corps was struggling to establish itself as an independent service and did not hold the same views as the Army and the Navy. The Air Corps did not have any doctrine at this time but their thinking was heavily influenced by airpower advocates such as Mitchell and Douhet that believed airpower could achieve decisive victory through attacks that would destroy the enemy's capability to wage war.[56] These views were the basis for the Air Corps fundamental view that it would play a mostly strategic role in WW II.

These beliefs, while not in any doctrine, were instilled in officers of the Air Corps at the Air Corps Tactical School that was established at Langley Field in 1920. Here is where the Air Corps used the visions of airpower theorists to establish guidance that could obtain specific objectives and developed strategic concepts. All of these concepts were based on one basic concept accepted by the school as a fundamental doctrine. "Bombers could *reach* there targets and *destroy* them."[57]

> The strategic airpower doctrine fashioned at the school rested on five fundamental aphorisms:
>
> 1. Modern great powers rely on major industrial and economic systems for production of weapons and supplies for their armed forces and for manufacture of products and provision of services to sustain life in a highly industrialized society. Disruption or paralysis of these systems undermines both the enemy's *capability* and *will* to fight.
> 2. Such major systems contain critical points whose destruction will break down these systems, and bombs can be delivered with adequate accuracy to do this.

3. Massed air strike forces can penetrate air defenses without unacceptable losses and destroy selected targets.
4. Proper selection of vital targets in the industrial/economic/social structure of a modern industrialized nation, and their subsequent destruction by air attack, can lead to fatal weakening of an industrialized enemy nation and to victory through air power.
5. If enemy resistance still persists after successful paralysis of selected target systems, it may be necessary as a last resort to apply direct force upon the sources of enemy national will by attacking cities. In this event, it is preferable to render cities untenable rather than indiscriminately to destroy structures and people.[58]

Individuals within the Air Corps that flew pursuit aircraft argued against the principle that the bomber will always get through. However in 1932, when these were written, pursuit aircraft did not have great advantages over bomber aircraft. Only bomber aircraft had the range and payload capabilities to conduct these forms of attack. It is with doctrine based on these principles that the Army Air Corps entered WW II.[59]

After the German successes in Europe, the Army recognized the need for the capability of air forces to support ground troops. In order to achieve this a separate ground support air arm would be needed. The Air Corps view was that ground support aircraft would be "expensive, nonexpendable machines and that pilots were trained at great expense and time. A ground commander would not be able to have his own air resources."[60] Even though both services had come to terms with the fact that ground support would be needed they could not agree on how to accomplish it. The Air Corps wanted centralized control of air assets and the Army wanted to decentralize control.

Another limitation in close air support functions was the technological capabilities of the U.S. industrial complex. The aircraft industry could produce big fast aircraft. Aircraft that would conduct close air support would be difficult to develop. The

aircraft that had demonstrated their capabilities in battle as well as the capabilities of antiaircraft guns showed that low slow flying survivable aircraft could not be developed for close air support. This was not within the current technological capabilities.[61] So, as the Army and the Army Air Corps prepared for war they had not yet developed a doctrine or an aircraft that could be used in a close air support role. Training of bomber crews had focused on attacking strategic targets in the belief that that was how an air force could be most effectively employed. It was with this indecision, how to employ Air Corps assets in support of ground troops, that the Army and the Army Air Corps began planning for the first major operations involving U.S. troops: TORCH landings and the offensive operations in North Africa.

The initial problem with the operations in North Africa was the inability to centralize control of the air assets. With a limited number of aircraft and theater wide requests, it was difficult for air commanders to satisfy all requests. External requirements imposed by President Roosevelt to support the other theaters with aircraft and munitions made a bad situation even worse.

During the initial operations of the war the Luftwaffe was able to operate aggressively against allied forces. This made ground commanders call for more sorties to protect them from these attacks. In order to provide the level of protection needed by ground commanders, aircraft had to be diverted from flying missions that would interdict the enemy and establish air superiority. It was fortuitous that Eisenhower understood the importance of close air support but also saw the need for a centralized control of air assets.[62] Eisenhower recognized the need for the proper employment of

airpower to continue operations, so he reorganized his air forces under a centralized command structure. He also organized his forces along functional lines. One part did close air support and the other conducted interdiction and airfield attack missions.[63].

It was under Eisenhower in North Africa that the Air Corps began to operate effectively in support of ground forces. Even though they had entered the war with a strategic vision for the use of airpower, their ability and effectiveness in support of ground troops would be just as important throughout the war effort. They were beginning to learn that victory through airpower would not be limited to strategic attack.

These lessons, which they learned in North Africa, where put to use in the European theater of operations. The XIX Tactical Air Command (TAC) under Maj Gen O. P. Weyland was instrumental in the success of Lt Gen George S. Patton's Third Army advance through France. Throughout the operations, aircraft of the XIX TAC provided direct support for the Third Army's advancing armor formations. They also conducted deep strikes to disrupt and disorganize the German defensive posture. The XIX was also given the unusual task of guarding Patton's right flank along the Loire. All of these procedures were learned on the fly by an Air Corps that had been trained in strategic operations.[64] The following is a message sent to the XIX TAC from Patton showing his appreciation of their accomplishments.

> From the bloody corridor at Avranches, to Brest, thence across France to the Saar, over the Saar into Germany, and now on to Bastogne, your record has been one of continuous victory. Not only have you invariably defeated a cunning and ruthless enemy, but also you have overcome by your indomitable fortitude every aspect of terrain and weather. Neither heat nor dust nor floods nor snow have stayed your progress. The speed and brilliancy of your achievements are unsurpassed in military history.

> ...I can find no fitter expression for my feelings than to apply to you the immortal words spoken by General Scott at Chapultepec when he said: "Brave rifles, veterans, you have been baptized in fire and blood and have come out steel."[65]

The same lessons were being learned and applied in the Pacific. General George C. Kenney commander of the 5th Air Force was developing procedures that would increase the effectiveness of his aircraft in support of General MacArthur's island hopping advances. While Gen Arnold was still extolling the virtues of high altitude bombing in Europe Kenney developed low altitude tactics that could be used to sink Japanese naval vessels. "By the beginning of 1943 they had become the deadliest naval weapon MacArthur possessed."[66] It was not strategic attacks against Japan that had the greatest effects in the Pacific. It was air operations flown in support of ground operations.

The entire focus of the Army Air Corps was not tactical operations in support of the Army. They continued to conduct extremely effective strategic air operations against both Germany and Japan. In Europe no German industry was safe from attack. They could not prevent the decline or eventual collapse of their economy. In a report from Albert Speer to Hitler dated 15 March 1945 he stated, "The German economy is heading for inevitable collapse within 4-8 weeks."[67] While the strategic air effort did not achieve the results expected by the Air Corps, it was still a decisive factor in the outcome of the war in Europe.[68] In the Pacific theater the atomic bombs dropped on Hiroshima and Nagasaki were demonstrations of the decisiveness of strategic air attack. But even without the use of atomic weapons the strategic attacks against Japan would

have "exerted sufficient pressure to bring about unconditional surrender and obviate the need for invasion."[69]

In summary, the Army Air Corps entered WW II with an air force that was trained to conduct strategic attacks against the enemy believing that was the key to victory. They learned that conducting tactical operations in support of the Army could also produce decisive results. However, the success of the atomic bombs followed by the unconditional surrender of Japan without being invaded seemed to validate the strategic premise of airpower theorists. While supporting Army operations could help achieve decisive results this was viewed as a long and drawn out process. Now with the help of atomic weapons strategic attack could give decisive results with minimal casualties to American troops. Thus, the Air Force had demonstrated by war's end that it had a greater strategic "reach" than the Army.

## The Air Force in Vietnam

Once again the Air Force entered a war with its capabilities focused on strategic attack. When the U.S. entered Vietnam with the primary purpose of training the South Vietnamese Army members of the Department of Defense saw the need for special forces that could fight conventional or what was now called unconventional warfare. The Army created the Green Berets and members of the Air Force saw the need for similar forces within their service.[70] This view was not widely accepted within the Air Force. This war was initially viewed as primarily an Army war and the Air Force would support the Army with firepower as needed.

This view changed when the U.S. military began expanding its role in Vietnam in 1964. The Chief of Staff of the Air Force, Gen Curtis LeMay, believed the only way to prevent a large commitment of U.S. soldiers was to begin a strategic bombing campaign against the North. This campaign would start just above the DMZ and would continue into the heart of the North. "All of his experience had taught him that such a campaign would end the war."[71] This was the view maintained by Air Force members throughout the war.

Campaigns such as *ROLLING THUNDER* while designed to cut the North Vietnamese lines of communication and sometimes strike near Hanoi were still too restrictive. The only way to achieve victory was through an air campaign conducted against strategic targets in North Vietnam.[72] It was not until the conduct of operations LINEBACKER and LINEBACKER II that, in the view of the Air Force, that a proper air strategy was used. "What airmen had long advocated as the proper employment of airpower was now the Presidents strategy-concentrated use of all forms of airpower to strike at the vital power centers, causing maximum disruption in the economic, military, and political life of the country."[73] In the view of the Air Force, it was these strategic bombing campaigns that facilitated the end of the war through their decisive results.

Throughout the Vietnam War, air operations were not limited to strategic attacks. The Air Force had proven itself as an excellent force multiplier for ground forces. When ground forces became engaged with numerically superior forces the Air Force could supply the fire power that could negate the numerical advantage. This was

demonstrated during the siege of Khe Sanh. Approximately 24,500 air strikes conducted from January through March of 1967 were instrumental in preventing the fall of the Marine Base at Khe Sanh. Along with the support of firepower Air Force C-123s and C-130s kept the Marines supplied. These supply missions conducted with the support of aircraft demonstrated the Air Forces ability to give tactical support to ground maneuver forces.[74]

## U.S. Air Force in Desert Storm

During the period between Vietnam and Desert Storm the Air Force began to diverge from its own view as a strategically focused force. The Air Land Battle doctrine that was developed by the Army for the European theater had a very profound effect on how the Air Force thought it would be used in the next war. Strategic attack began to be equated with nuclear capable bombers. Fighter aircraft would be used to establish air superiority and then aircraft, such as the A-10, would be used specifically for CAS in direct support of the Army. This cooperation between the Air Force and Army was essential for success against an opponent that had numerical superiority on the battlefield. This view was enforced by the collapse of the Soviet Union. Nuclear bombers no longer appeared to have a mission and therefore there was no place for strategic attack.

This view, while shared by many Air Force senior leaders, was not shared by everybody. This caused a split within the Air Force between the proponents of strategic attack and those that saw strategic attack as an outdated concept of the cold

war. While both groups felt that achieving air superiority was the first priority of the Air Force, they could not agree on how air forces should be used once air superiority was achieved.

The first Air Force senior commander into the theater of operations was Lt Gen Chuck Horner. He espoused the view that the primary purpose of the Air Force would be to support ground operations. His exact view was that after achieving air superiority the Air Force should be used as fire support for the Army. This would weaken the enemy and allow the Army to conduct an effective ground campaign against a numerically superior force. The Air Force would not be used as an offensive weapon. Instead he would "build a hose and point it where the ground commander sees that it's needed."[75]

The other view of how airpower should be used in Operation Desert Storm was based on the offensive nature of airpower. Its proponents did not see strategic attack as a mission only for nuclear bombers. Their view was that using stealth and precision weapons a country could be forced to capitulate by strategic targeting and attack. This would prevent a costly ground war. This looked a lot like the view of victory through airpower that the Army thought it had removed from the Air Force lexicon by the Air Land Battle doctrine. However, this was the role for airpower that the theater CINC Gen Norman Schwarzkopf needed and wanted.[76]

The actual way the Air Force was used was a combination of the two views. The strategic attack portion came from the air campaign, initially called Instant Thunder, that would demonstrate the capabilities of the Air Force and in some minds end the war

without a ground campaign. This was combined with interdiction sorties that were used to isolate the battlefield and then attrit the fielded Iraqi forces.[77]

In the minds of airpower advocates, the role of the Air Force in this war was decisive. Proponents of ground combat, specifically the Army, do not hold the same view. The Air Force did not deliver on its promise of victory through airpower. The strategic attacks made it impossible for the Iraqi leadership to control their armed forces and to conduct offensive operations. Combined with the interdiction attacks that isolated the battle field and attrited Iraqi forces, airpower was instrumental in the short duration, 100 hours, of the ground offensive.. But, a ground offensive was still required. "The Gulf War confirmed the Air Force's ever-increasing ability to destroy military things and people. But airpower had not demonstrated an ability to change governments."[78]

## VI ANALYSIS

This section will analyze all of the information put forward in the monograph. It begins with a review of all the major points that were made based on the subordinate research questions. The section begins with a discussion of the points of disagreement between the Army and the Air Force. It concludes with an analysis of the information put forward in the historical background section.

The paper initially evaluated some items that may be perceived as joint operations barriers. FSCL placement, BAI versus AI, apportionment, and the role of airpower as either a supporting or supported effort were the major issues put forward

Upon closer examination of the FSCL issue we found that JFCs should and do establish the boundaries in their AOR. How the FSCL should be used is based on their intent. The FSCL as a fire control measure should not have a major impact on the conduct of deep operations. The major point of disagreement is FSCL placement. This is easily solved by placing the FSCL such that whichever service is doing the most damage to the enemy should do the least amount of coordinating. In the historical background we put forward that the coordination between air and ground forces has always been a matter of contention. It has also always been a requirement. The Luftwaffe assigned Air Liaison Detachments to facilitate the cooperation between ground and air forces and to ensure that the Luftwaffe was used properly. This was also evidenced by the close working relationship that was established between Third Army and the XIX TAC. The FSCL, as a control measure, should not be a source of disagreement. It should be used to facilitate joint operations and prevent fratricide.

In the discussion of BAI versus AI we established that both the Army and the Air Force want the same thing, they just see the battlefield divided differently. The Air Force concept that BAI and AI are one mission is sufficient for planning purposes. Calling AI sorties BAI will not increase the number allotted to the corps commanders or influence how they are planed. The term BAI is just a hold over from NATO operations. However, the BAI versus AI issue relates directly to the next issue which is how aircraft should be used.

Apportionment of sorties is where the first major disconnect occurs. The Air Force believes achieving air superiority is always its primary mission. This gives the Air

Force the freedom of maneuver that is required to conduct AI and CAS. Achieving air superiority also protects ground forces from enemy attack. This is something that is often overlooked by the Army. Conducting operations prior to the Air Force achieving air superiority not only limits the number of AI and CAS sorties available it also increases the risk of ground forces being attacked by enemy fixed and rotary wing assets.

The Army view is that air superiority is important, but support of ground troops may be as important in certain operations. They do not maintain that achieving air superiority is always the primary mission of the Air Force. History shows that most successful ground operations where preceded by the establishment of air superiority. However, this is not always the case. Denying air superiority to your enemy by maintaining a defensive posture during the initial phases of the conflict has been successful in the past. (See appendix, Arab-Israeli War.) While this role appears to negate the premise that airpower is primarily offensive in nature it does not if you ascribe to Clausewitz' view of the defense that allows for offensive action. "The defensive form of war is not a simple shield, but a shield made up of well-directed blows."[79]

The issue over what is more important air superiority or support of ground forces ties in directly with the difference of opinion held by each service over the role of airpower. The Air Force is still trying to achieve its goal of victory through airpower. The Army holds the belief that ground forces are the supported effort with airpower as the supporting effort.

This philosophical difference appears to be based on the history of each service. The Air Force, since its inception, has viewed itself as a unique branch of the military with a separate and distinctive capability. It never has to fight the close fight. It can go deep on the first day of the war. It also believes that by going deep it can negate the need for a close fight. The Army, on the other hand, has always had to fight a series of close battles in order to go deep. This is supported by its belief that only ground forces can achieve the strategic objectives.

During the discussion of deep operations, we established that the Army and Air force have different views on where deep operations start and how deep they go. These differing views, however, do not pose a problem for successful deep operations. The problem uncovered here was that once again the primary disagreement was on the purpose of deep operations. The Air Force holds that deep operations alone can directly support the CINCs objectives. The Army view is that deep operations should support the CINCs objectives by supporting the objectives of the ground component commander. The issue is can deep operations negate the need for the close fight or can they only influence the outcome of the close fight. This ties in again with the question as to whether airpower is the supported or supporting effort. These views were the basis for the disagreement between the Army and the Air Corps at the beginning of WW II. The Air Corps, believing in Douhet, thought the war would be ended quickly through the use of strategic attack. This caused them to be unprepared to conduct operations in support of ground troops in North Africa. The lessons learned there and in Europe as well as the Pacific showed the need for joint Army-Air Corps operations.

However, a level of mistrust was developed between the Army and the Air Force that is still there today.

The views on whether or not airpower is a supporting or supported effort has a direct influence on how each service plans to use deep operations. The Air Force takes a strategic view of their operations. Looking at the enemy as a system, they attempt to cause strategic paralysis through the use of deep operations. The Army plans their deep operations as part of the close fight. As established earlier, successful deep operations limit or remove the enemy's freedom of maneuver.

The major problem with the Air Force view of deep operations is that it fails to recognize that military systems are self-organizing. The strategic attacks conducted by all air forces during WW II demonstrated that they can be highly disruptive and effective in reducing an enemy's war making potential. Some may argue that the atomic attacks against Japan were the major influences on the end of the war in that theater. However, it may also be argued that the war would have ended within a few months without the bombing of Hiroshima and Nagasaki.[80] In Operation Desert Storm strategic attack effectively isolated the Hussein regime but did not bring about the withdrawal of Iraqi forces from Kuwait. The Air Force has yet to deliver on its promise of victory through airpower. This seems to support the Army's view that victory through airpower has yet to be seen and only ground forces can be decisive.

All of the previous assertions tie in to one major point of discontentment. How decisive can airpower be or is it always relegated to a subordinate role. The debate over how decisive airpower has been in the conduct of war has waged since WW II and

continues today. These questions can not be answered through historical analysis. As shown earlier, the decisiveness of the attacks on Hiroshima and Nagasaki is still being debated. However, some conclusions about the successful use of airpower can be made from all of the historical examples.

Airpower must be employed in both strategic and tactical operations. It can not be limited to the role of supporting ground operations. However, the primacy of the strategic or tactical use of airpower is based on the circumstance. To assume that either mission is the primary mission in all instances is incorrect. The strategic effects of airpower were demonstrated in every conflict where strategic attack was attempted. It must also be noted that an air force must be properly equipped to conduct strategic attack. The Luftwaffe demonstrated that focusing on one mission, when obtaining equipment, will doom the other to failure.

Airpower is offensive in nature. Offensive use of airpower allows the military leadership to disrupt and destroy an enemy's war making capabilities before it can be brought to the battlefield. Using an air force in a defensive role will never bring victory and can only prevent defeat. The offensive capability of an air force is essential in order for it to establish air superiority. Air superiority is crucial to achieve victory. It has been proven that the need to achieve air superiority may not always be the first mission of an air force. However, upon closer examination of the Arab-Israeli War it is evident that the early success of the Egyptians was halted because they failed to achieve air superiority. It may not be the first mission, but to ensure success it must be achieved at some point during the operation.

Airpower must be used in support of ground operations. The flexibility and amount of firepower aircraft can deliver to ground commanders makes it essential in successful operations. Air support of ground operations can also give a numerically inferior force a decided advantage in firepower and the freedom of maneuver. In order to conduct successful missions in support of ground operations an air force must be trained and equipped. Proper coordination methods and control measures must also be trained and understood. The need for liaison between ground and air forces has been demonstrated since WW II.

## IV CONCLUSIONS AND RECOMMENDATIONS

The following conclusions are made in relation to the research question: Do joint planning procedures optimize the use of airpower during joint deep operations? First, there are no joint planning procedures that have an adverse effect on how joint operations are conducted. However, each services' view on how decisive airpower can be makes the planning of joint operations extremely difficult and sometimes ineffective.

The view each service maintains directly relates to how the mission of deep operations is planned. The Air Force, believing that airpower can be decisive plans deep accordingly. The major focus of its operations is to use strategic attacks to bring about the paralysis of the enemy and end the conflict without a ground war. The Army maintains that airpower can not be decisive and plans air operations in support of the close fight. These two differing views are a major obstacle to planning joint deep operations.

Strongly adhering to just one of the views of airpower's potential is a limiting factor when planing joint deep operations. Maintaining the idea that airpower can never be decisive may be to remove a planning option from the theater CINC. The Army is focused on the close battle. This is understandable since it must fight the close battle to get deep. Their doctrine states that the enemy is best defeated fighting him both "close and deep simultaneously."[81] This also makes sense if the deep fight is conducted to support the close fight. However, a truly successful deep operation could negate the need to fight close. The Army must consider the possibility that victory may be obtained through joint deep operations alone, or in Air Force terminology, victory through airpower.

The Air Force, on the other hand, can not go into each fight believing that victory can be achieved through airpower alone. The statement that only ground troops can take and hold land may not be an axiom, but it is very close to one. Using airpower to change governments or recapture territory is not improbable but would require a unique set of circumstances we have not seen yet. Just as the Army must look at a joint deep operation as being the key to success, the Air Force must consider a joint close fight as essential for victory.

The strong views that each service holds on how successful deep operations should be conducted can be tied to their respective histories. The Army has always had to fight the close fight in order to get deep. The Air Force saw, from its inception, that the ability to conduct strategic attack may negate the need for a close fight.

The final conclusion is that each service must be prepared to allow the other one to be the supported force while acting as the supporting effort. To assume that either course of action will always be the best would be a major flaw in the initial intelligence preparation of the battlefield and mission analysis.

A possible solution to these problems is addressed by Col John Warden in his book The Air Campaign. In it he discusses the concept of a key force. He states that during certain operations one force may be the key force and other forces would act in the supporting role. He equates this to a concerto where on instrument is featured with the remaining ones playing in the background. The idea of a key force, however, is not widely accepted in a time of increased joint mindedness.[82] But, if you use the term key operations instead of force the concept is more applicable when you consider joint operations. This concept also prevents the creation of separate campaigns either air or ground. There is just one joint campaign and the focus of the operations is either deep, close or a combination of the two.

In Operation Desert Storm the initial focus of the Air Force was on strategic paralysis of the enemy. The focus then shifted to shaping the battle field. The key operation was initially deep. It then shifted to the close fight. There is no reason to believe that in the next conflict that the same thing could happen or that the roles could be reversed.

When using the concept of key operations, it is important to remember that the focus will probably shift during the campaign. For that reason both the air and ground commanders or planners must plan each phase together. While planning they must also

take into account what effects the current or first phase will have on future phases. There can no longer be a ground planning cell or an air planing cell. These planning teams must plan together. This ensures that the desired effects for the current operation are accomplished while complementing or at least not adversely effecting future operations.

During Operation Desert there was a disconnect between the air planners and the ground planners when the close fight became the focus. This may have been because of the separation of the planning cells or just a misunderstanding between them. Whatever the reason, if the campaign planing for the entire operation had been conducted jointly, this would have been alleviated. Joint operations require joint planning. The joint planning should probably occur at the JFC level. To prevent a land or air focus which equates to a close or deep focus the JFC should be separate from any of the component commands.

The only barriers to conducted effective joint deep operations are those imposed by the services on themselves. Their parochial views on the role of air versus ground forces as well as the effects they expect from them are the major reasons for any reduced effectiveness. If the services would enter each operation with an open mind on how best to achieve the JFCs strategic objectives, it would go a long way toward reducing inter-service rivalry and improving the effects of joint operations.

# APPENDIX

## The Luftwaffe in WW II

The Luftwaffe was initially developed as a tactical arm with very little strategic bombing capability. Hitler recognized the potential of a preemptive war that would be waged to prevent Germany's rearmament. Aircraft that would be able to strike deep against an enemy's infrastructure would not be as important as a tactical air force that could support ground operations.[83]

The Luftwaffe did believe that strategic bombing could help achieve victory. They also believed that a totalitarian system such as Germany would be able to endure the effects of a strategic bombing campaign. However, Göring as well as the German aircraft industry helped to shape the Luftwaffe as a primarily tactical force. The industrial base of Germany did not have the technical base to develop large, long range strategic aircraft. Göring did recognize the need for the development of strategic attack aircraft but his ineptness as the head of the Luftwaffe and Economics Minister had an adverse effect on the development of strategic aircraft. He failed to focus the development of strategic versus tactical aircraft. Göring became obsessed with the numbers of aircraft made versus the capabilities of the aircraft. Göring did, however, help to establish the Luftwaffe as an independent military arm.[84]

The tactical focus of the Luftwaffe was a major key to its success in the initial campaigns. Their initial plans were to neutralize the enemy's air force than to focus on support of the ground troops. By supporting the ground forces, the Luftwaffe acted as

mobile artillery and facilitated the rapid advance of the German ground forces. The support given to the ground forces was either direct such as CAS and indirect which is much like BAI. Indirect support sorties outnumbered direct sorties by about five to four.[85] This demonstrated the Luftwaffe recognition that destroying enemy forces before they are in contact with your forces is the preferred method of employing airpower.

To aid in the cooperation between the Luftwaffe and the Army Air Liaison Detachments (Luftnachrichtenverbindungstruppe) were assigned to the front line units. This ensured that air support requests could be radioed directly to the Luftwaffe's headquarters. These liaison elements would also advise the ground commanders on the suitability and possible effects of air attack. According to the German high command, the Luftwaffe "saved the Army a vast number of casualties and contributed materially to ultimate victory."[86]

The tactically focused Luftwaffe, which was extremely successful on continental Europe, would be challenged by its operations against Great Britain. The Luftwaffe recognized in 1939 that it did not have the capability to obtain a quick victory through the use of airpower alone. Germany did not have the aircraft to conduct simultaneous operations against air bases and the strategic infrastructure of Great Britain. This type of operation would favor the defense.[87] The main reason for the failure of the Luftwaffe was their inability to conduct a strategic campaign that remained focused. During ground operations on the continent, sorties could be divided out among the front line units. To conduct a strategic campaign against Great Britain the Luftwaffe

would have to develop a focused campaign and continue to prosecute it to its conclusion. This was not possible because of leadership and equipment capabilities.[88]

The German attack against the Soviet Union made matters worse for the Luftwaffe. The Campaign called "Operation Barbarossa" was planned to be a quick decisive victory but the Luftwaffe was all ready overextended by its operations against Great Britain. This time the error of leadership would not be Göring's, who was opposed to the plan, but Hitler himself. Göring understood the need to focus the Luftwaffe efforts on one campaign and knew that offensive ground operations would require the support of the Luftwaffe.[89] These missions would reduce their capability to conduct strategic attacks against Great Britain and make the same missions almost impossible against the Soviet Union. The need for the Luftwaffe to support the Army's offensive resulted in the fact that eighty percent of sorties flown in 1942 had to be in support of ground operation.[90] Combine the low sortie count available for strategic attack with the small bomb loads available and it easy to see why any strategic campaign against the Soviet Union was impossible.

The Luftwaffe entered WW II with an extremely effective air force that was designed to support the ground armies. They developed procedures to help facilitate these operations. The aircraft they had were also well suited to perform ground support operations. When it came to conducting strategic operations against Great Britain and the Soviet Union the Luftwaffe was unable to be successful. Their inability to plan and conduct the operations as well as the limitations of the aircraft available to the Luftwaffe resulted in their failure.

## The October War 1973

The primary use of airpower through all of the Arab Israeli wars was to support and facilitate the ground operations. Air attacks were conducted to achieve air superiority and to increase the firepower available to maneuver forces. The October War of 1973 is unique only in the fact the Egyptian Air Force (EAF) did not attempt to achieve air superiority. It relinquished that to the Israeli Air Force (IAF). Their plan was to rely on an air defense system that would protect them from IAF attack.

Initial success on the Suez and Golan fronts seemed to support this plan. However, once the IAF developed tactics to counter the air defense threat and conducted SEAD operations in conjunction with ground forces they were again able to support there maneuver forces and subject the Arab air forces to severe attacks. Arab ground forces were also restricted in their ability to maneuver because whenever they left the air defense umbrella they were mauled by IAF attacks. This war while demonstrating the importance of tactical support of maneuver forces it also showed that air forces must be primarily an offensive weapon. Putting air forces in a defensive role can prevent the loss of a war but will not allow you to win.[91]

## Iran-Iraq War

"Air power had an important impact upon the war, but it never had the major strategic or tactical impact that the number and quality of the weapons on each side should have permitted."[92] Both countries maintained a modern air force, but neither

country was able to effectively employ their systems. Both air forces conducted strategic attacks against the enemy's infrastructure as well as tactical operations in support of maneuver. However, neither was able to conduct these operations effectively. Strategic operations were limited by political considerations a failure to commit sufficient resources as well as equipment limitations. Tactical operations such as close air support and interdiction were limited by the capabilities of the aviators and command and control problems. This war demonstrated that proper equipment is not the only key to successful operations. Properly trained operators are also essential for success.[93]

The main lessons to be learned from the Iran-Iraq War can be seen by analyzing what they failed to do. While both countries conducted strategic attacks, neither one had a plan that was based on achieving strategic objectives. Strategic attacks took on a "ritualistic"[94] quality. One air force's strategic attack called for a reply in kind from the other.

During tactical operations that require good coordination between air and ground forces neither air force could coordinate effectively. These problems had two major causes. There was a complete separation of the command of land and air forces. This had an adverse effect on the tempo of combined operations. Senior air commanders were also extremely worried about preserving aircraft; even if these concerns reduced the effectiveness of aircraft missions. The second problem was alluded to earlier. That is the lack of proper training that each air force had. Their equipment was first rate their training was not.[95]

The final lesson to be learned from the Iran-Iraq War is the issue of the air force as a deterrent force. Since you must have and maintain the air force in order for it to act as a deterrent, attrition of your forces becomes a major concern for senior commanders. This concern with attrition prevents or at least hinders the air force's use as an offensive weapon. Offensive operations usually result in more losses. This means that the air force must be only be used as a defensive force to preserve it. As discussed earlier, an air force that is relegated to a defensive role can not win wars for you it can only help prevent your defeat.[96]

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